

CLAIMSWhat is claimed is:

1. A method in a data processing system for enabling a user to input
5 data into a document comprising cells arranged in columns and rows, a first of the
cells and a second of the cells each having an original content, the method
comprising the steps of:

overriding the original content of the first cell with a first user inputted value;

recalculating the cells based on the first user inputted value;

10 after recalculating the cells based on the first user inputted value, overriding
the original content of the second cell with a second user inputted value;

recalculating the cells based on the second user inputted value; and

automatically restoring the original content of the first cell based on a user
input such that the second user inputted value is maintained in the second cell.

2. The method of claim 1, wherein the document is a spreadsheet
document and the steps of the method are performed by a spreadsheet program.

3. The method of claim 1, wherein the step of recalculating the cells
based on the first user inputted value comprises automatically recalculating each
cell which contains a reference to the first cell and wherein the step of recalculating
the cells based on the second user inputted value comprises automatically
recalculating each cell which contains a reference to the second cell.

25 4. The method of claim 1, further comprising the steps of:
providing to the user an option for selecting the first cell to input the first user
inputted value; and
providing to the user an option for inputting the first user inputted value.

5. The method of claim 1, wherein the step of overriding the original content of the first cell with the first user inputted value further comprises the steps of:

storing the first user inputted data as a last result of a formula of the first cell;
 5 setting a flag of the first cell to indicate that the stored last result of the first cell is valid; and
 setting a flag of each cell which references the first cell to indicate that the stored last result of each cell which references the first cell is invalid.

10 6. The method of claim 1, wherein each cell has a last result and a flag that indicates whether the last result is valid, and wherein the step of recalculating the cells based on the first user inputted value further comprises the steps of:

for each cell being recalculated,
 determining whether the flag is set to valid;
 when it is determined that the flag is not set to valid,
 recalculating the last result of the cell to produce a new
 value;
 replacing the last result with the new value such that the new
 value becomes the last result; and
 setting the flag to valid; and
 using the last result for the recalculation.

25 7. A method in a data processing system comprising a document with cells arranged in rows and columns, each cell comprising a formula and a last result, the method comprising the steps of:

receiving a plurality of values for a plurality of the cells; and
 storing the values in the last result of the plurality of the cells such that the values are used during recalculation instead of the formulas and such that each of
 30 the formulas for the plurality of the cells can be restored independently of other of the plurality of cells.

8. A data processing system comprising:

a secondary storage device comprising a document having cells arranged in columns and rows, a first of the cells and a second of the cells each having an original content;

5 a memory comprising a computer program that overrides the original content of the first cell with a first user inputted value, recalculates the cells based on the first user inputted value, overrides the original content of the second cell with a second user inputted value after recalculating the cells based on the first user inputted value, recalculates the cells based on the second user inputted value, and
10 automatically restores the original content of the first cell based on a user input such that the second user inputted value is maintained in the second cell; and
a processing unit that runs the computer program.

9. The data processing system of claim 8, wherein the document is a spreadsheet document and the steps of the method are performed by a spreadsheet program.

10. The data processing system of claim 8, wherein each cell comprises:

a formula;
a last result of the formula; and
a flag indicating a validity of the last result.

11. A computer-readable medium containing instructions that cause a data processing system to perform a method for enabling a user to input data into a document comprising cells arranged in columns and rows, a first of the cells and a second of the cells each having an original content, the method comprising the steps of:

overriding the original content of the first cell with a first user inputted value;

recalculating the cells based on the first user inputted value;

after recalculating the cells based on the first user inputted value, overriding the original content of the second cell with a second user inputted value;

recalculating the cells based on the second user inputted value; and

automatically restoring the original content of the first cell based on a user input such that the second user inputted value is maintained.

12. The computer-readable medium of claim 11, wherein the document is a spreadsheet document and the steps of the method are performed by a spreadsheet program.

13. The computer-readable medium of claim 11, wherein the step of recalculating the cells based on the first user inputted value comprises automatically recalculating each cell which contains a reference to the first cell and wherein the step of recalculating the cells based on the second user inputted value comprises automatically recalculating each cell which contains a reference to the second cell.

14. The computer-readable medium of claim 11, further comprising the steps of:

providing to the user an option for selecting the first cell to input the first user inputted value; and

providing to the user an option for inputting the first user inputted value.

15. The computer-readable medium of claim 11, wherein the step of overriding the original content of the first cell with the first user inputted value further comprises the steps of:

storing the first user inputted data as a last result of a formula of the first cell;

5 setting a flag of the first cell to indicate that the stored last result of the first cell is valid; and

setting a flag of each cell which references the first cell to indicate that the stored last result of each cell which references the first cell is invalid.

10 16. The computer-readable medium of claim 11, wherein each cell has a last result and a flag that indicates whether the last result is valid, and wherein the step of recalculating the cells based on the first user inputted value further comprises the steps of:

for each cell being recalculated,

determining whether the flag is set to valid;

when it is determined that the flag is not set to valid,

recalculating the last result of the cell to produce a new value;

replacing the last result with the new value such that the new value becomes the last result; and

setting the flag to valid; and

using the last result for the recalculation.

17. A computer-readable medium containing instructions that cause a data processing system to perform a method in a data processing system comprising a document with cells arranged in rows and columns, each cell comprising a formula and a last result, the method comprising the steps of:

receiving a plurality of values for a plurality of the cells; and

25 storing the values in the last result of the plurality of the cells such that the values are used during recalculation instead of the formulas and such that each of the formulas for the plurality of the cells can be restored independently of other of the plurality of cells.

18. A computer-readable memory device encoded with a data structure with entries, each entry reflecting a cell in a spreadsheet that is recalculated by a spreadsheet program which is encoded in the memory device and which is run by a processor, each cell comprising:

- 5 a first storage area that stores a formula; and
- a second storage area that stores a numerical value that temporarily overrides the formula so that the numerical value is used instead of the formula during recalculation.